IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Tony N. Frudakis et al.
Application No.	:	09/590,583
Filed	:	June 8, 2000
For	:	COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF BREAST CANCER

Docket No.	:	210121.419C9
Date	:	April 5, 2001

Commissioner for Patents
Washington, DC 20231

RESPONSE TO THE NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Sir:

In response to the Notice to Comply dated February 5, 2001, please find enclosed the following: From PTO/SB/21; a computer diskette containing a copy of the Sequence Listing in computer readable format; a declaration regarding the computer diskette; a copy of the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures.

The enclosed electronic copy of the Sequence Listing includes no new matter that goes beyond the application as originally filed. Applicants respectfully submit that the above-identified application is now in conformance with 37 C.F.R. §§ 1.82-1.825 and WIPO Standard 25.

Respectfully submitted,

Seed Intellectual Property Law Group PLLC

William T. Christiansen, Ph.D.
Registration No. 44,614

JEP:ljt
Enclosure:
      Postcard
      Form PTO/SB/21
      Computer diskette
      Declaration Regarding Computer Diskette
      Copy of Notice to Comply
701 Fifth Avenue, Suite 6300
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031
Wpn\210121\419c9\seq\419c9.rsp.doc

Raw Sequence Listing Error Summary

ERROR DETECTED   SUGGESTED   CORRECTION   SERIAL NUMBER: _O9/590,583_

1 ✓ Wrapped Nucleics
The number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".

2 _____ Wrapped Aminos
The amino acid number/text at the end of each line "wrapped " down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".

3 _____ Incorrect Line Length
The rules require that a line not exceed 72 characters in length. This includes spaces.

4 _____ Misaligned Amino Acid Numbering
The numbering under each 5th amino acid is misaligned. This may be caused by the use of tabs
between the numbering. It is recommended to delete any tabs and use spacing between the numbers.

5 _____ Non-ASCII
This file was not saved in ASCII (DOS) text, as required by the Sequence Rules.
Please ensure your subsequent submission is saved in ASCII text so that it can be processed.

6 _____ Variable Length
Sequence(s) _____ contain n's or Xaa's which represented more than one residue.
As per the rules, each n or Xaa can only represent a single residue.
Please present the maximum number of each residue having variable length and
indicate in the (ix) feature section that some may be missing.

7 _____ PatentIn ver. 2.0 "bug"
A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid
sequence(s) _____. Normally, PatentIn would automatically generate this section from the
previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section
to the subsequent amino acid sequence.

8 _____ Skipped Sequences (OLD RULES)
Sequence(s) _____ missing. If intentional, please use the following format for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X:
(i) SEQUENCE CHARACTERISTICS:(Do not insert any headings under "SEQUENCE CHARACTERISTICS")
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X:
This sequence is intentionally skipped

Please also adjust the "(iii) NUMBER OF SEQUENCES:" response to include the skipped sequence(s).

9 _____ Skipped Sequences (NEW RULES)
Sequence(s) _____ missing. If intentional, please use the following format for each skipped sequence.
<210> sequence id number
<400> sequence id number
000

10 _____ Use of n's or Xaa's (NEW RULES)
Use of n's and/or Xaa's have been detected in the Sequence Listing.
Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.

11 _____ Use of <213>Organism (NEW RULES)
Sequence(s) _____ are missing this mandatory field or its response.

12 _____ Use of <220>Feature (NEW RULES)
Sequence(s) _____ are missing the <220>Feature and associated headings.
Use of <220> to <223> is MANDATORY if <213>ORGANISM is "Artificial" or "Unknown"
Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 6/01/98, Vol. 63, No. 104, pp. 29631-32)   (Sec. 1.823 of new Rules)

13 _____ PatentIn ver. 2.0 "bug"
Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted
file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing).
Instead, please use "File Manager" or any other means to copy file to floppy disk.

OIPE

```
                RAW SEQUENCE LISTING          DATE: 06/19/2000
                PATENT APPLICATION:  US/09/590,583    TIME: 10:55:27

                Input Set : A:\419c9.app
                Output Set: N:\CRF3\06192000\I590583.raw
```

Does Not Comply Corrected Diskette Needed

```
    3 <110> APPLICANT: Frudakis, Tony N.
    4         Reed, Steven G.
    5         Smith, John M.
    6         Misher, Linda E.
    7         Dillon, Davin C.
    8         Retter, Marc W.
    9         Wang, Aijun
   10         Skeiky, Yasir A.W.
   12 <120> TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE
   13         THERAPY AND DIAGNOSIS OF BREAST CANCER
   16 <130> FILE REFERENCE: 210121.419C9
C--> 18 <140> CURRENT APPLICATION NUMBER: US/09/590,583
   19 <141> CURRENT FILING DATE: 2000-06-08
   22 <160> NUMBER OF SEQ ID NOS: 324
   24 <170> SOFTWARE: FastSEQ for Windows Version 3.0


ERRORED SEQUENCES

    1109 <210> SEQ ID NO: 59
    1110 <211> LENGTH: 208
    1111 <212> TYPE: DNA
    1112 <213> ORGANISM: Homo sapien
    1114 <400> SEQUENCE: 59
    1115  gctcctcttg ccttaccaac tttgcaccca tcatcaacca tgtggccagg tttgcagccc     60
E--> 1116
      aggctgcaca tcaggggact gcctcgcaat acttcatgct gttgctgctg actgatggtg     120 ctgtgacgga tgtggaagcc acacgtgagg ctc
    1117  cagtgatcat tatgggtggt aaatggct                                      208
    2369 <210> SEQ ID NO: 151
    2370 <211> LENGTH: 323
    2371 <212> TYPE: DNA
    2372 <213> ORGANISM: Homo sapien
    2374 <220> FEATURE:
    2375 <221> NAME/KEY: misc_feature
    2376 <222> LOCATION: (1)...(323)
    2377 <223> OTHER INFORMATION: n = A,T,C or G
    2379 <400> SEQUENCE: 151 tnacgcngcn acnntgtaga ganggnaagg cnttccccac attncccctt catnanagaa 60
E--> 2380  ttattcnacc aagnntgacc natgccnttt atgacttaca tgcnnactnc ntaatctgtn     120
E--> 2381  tcnngcctta aaagcnnntc cactcatagc ntcancactg tntgtgtnac ntcatnaact     180
E--> 2382  gtcngnaata ggggcncata actacagaaa tgcanttcat actgcttcca ntgccatcng     240
E--> 2383  cgtgtggcct tncctactct tcttntattc caagtagcat ctctggantg cttccccact     300
E--> 2384  ctccacattg ttgcagcnat aat                                           323
    4835 <210> SEQ ID NO: 295
    4836 <211> LENGTH: 1853
    4837 <212> TYPE: DNA
    4838 <213> ORGANISM: Homo sapien
    4840 <400> SEQUENCE: 295
    4841  gggtcgccca gggggsgcgt gggctttcct cgggtgggtg tgggttttcc ctgggtgggg     60
```

See #1 on Error Summary Sheet

RAW SEQUENCE LISTING   DATE: 06/19/2000
PATENT APPLICATION: US/09/590,583   TIME: 10:55:28

Input Set : A:\419c9.app
Output Set: N:\CRF3\06192000\I590583.raw

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         4842  tgggctgggc trgaatcccc tgctggggtt ggcaggtttt ggctgggatt gacttttytc   120
         4843  ttcaaacaga ttggaaaccc ggagttacct gctagttggt gaaactggtt ggtagacgcg   180
         4844  atctgttggc tactactggc ttctcctggc tgttaaaagc agatggtggt tgaggttgat   240
         4845  tccatgccgg ctgcttcttc tgtgaagaag ccatttggtc tcaggagcaa gatgggcaag   300
         4846  tggtgctgcc gttgcttccc ctgctgcagg gagagcggca agagcaacgt gggcacttct   360
         4847  ggagaccacg acgactctgc tatgaagaca ctcaggagca agatgggcaa gtggtgccgc   420
         4848  cactgcttcc cctgctgcag ggggagtggc aagagcaacg tgggcgcttc tggagaccac   480
E--> 4849
         gacgaytctg ctatgaagac actcaggaac aagatgggca agtggtgctg ccactgcttc      540
         4850  gccttcatgg akcccaggta ccacgtcctt ggagaagatc tggacaagct ccacagagct   660
         4851  gcctggtggg gtaaagtccc cagaaaggat ctcatcgtca tgctcaggga cackgaygtg   720
         4852  aacaagargg acaagcaaaa gaggactgct ctacatctgg cctctgccaa tgggaattca   780
         4853  gaagtagtaa aactcstgct ggacagacga tgtcaactta atgtccttga caacaaaaag   840
         4854  aggacagctc tgayaaaggc cgtacaatgc caggaagatg aatgtgcgtt aatgttgctg   900
         4855  gaacatggca ctgatccaaa tattccagat gagtatggaa ataccactct rcactaygct   960
         4856  rtctayaatg aagataaatt aatggccaaa gcactgctct tatayggtgc tgatatcgaa   1020
         4857  tcaaaaaaca agcatggcct cacaccactg ytacttggtr tacatgagca aaaacagcaa   1080
         4858  gtsgtgaaat ttttaatyaa gaaaaaagcg aatttaaaat gcrctggata gatatggaag   1140
         4859  ractgctctc atacttgctg tatgttgtgg atcagcaagt atagtcagcc ytctacttga   1200
         4860  gcaaaatrtt gatgtatctt ctcaagatct ggaaagacgg ccagagagta tgctgtttct   1260
         4861  agtcatcatc atgtaatttg ccagttactt tctgactaca aagaaaaaca gatgttaaaa   1320
         4862  atctcttctg aaaacagcaa tccagaacaa gacttaaagc tgacatcaga ggaagagtca   1380
         4863  caaaggctta aaggaagtga aaacagccag ccagaggcat ggaaactttt aaatttaaac   1440
         4864  ttttggttta atgttttttt tttttgcctt aataatatta gatagtccca aatgaaatwa   1500
         4865  cctatgagac taggctttga gaatcaatag attctttttt taagaatctt ttggctagga   1560
         4866  gcggtgtctc acgcctgtaa ttccagcacc ttgagaggct gaggtgggca gatcacgaga   1620
         4867  tcaggagatc gagaccatcc tggctaacac ggtgaaaccc catctctact aaaaatacaa   1680
         4868  aaacttagct gggtgtggtg gcgggtgcct gtagtcccag ctactcagga rgctgaggca   1740
         4869  ggagaatggc atgaacccgg gaggtggagg ttgcagtgag ccgagatccg ccactacact   1800
         4870  ccagcctggg tgacagagca agactctgtc tcaaaaaaaa aaaaaaaaaa aaa           1853
         5564  <210> SEQ ID NO: 315
         5565  <211> LENGTH: 293
         5566  <212> TYPE: PRT
         5567  <213> ORGANISM: Homo sapiens
         5569  <400> SEQUENCE: 315
         5570  Met His Leu Ser Phe Pro Ala Phe Leu Pro Pro Trp Met Asp Arg Gly
         5571                    5                 10                  15
         5573  Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp His Asn Asp Ser Ser
         5574                   20                 25                  30
         5576  Val Lys Thr Leu Gly Ser Lys Arg Cys Lys Trp Cys Cys His Cys Phe
         5577                   35                 40                  45
         5579  Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val Val Ala Trp Gly Asp
         5580             50                 55                 60
         5582  Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr His Val His Gly Glu
         5583   65                 70                 75                  80
         5585  Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg
         5586                   85                 90                  95
         5588  Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Arg Asp
         5589                  100                105                 110
         5591  Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser
```

See #1 Summary on "Error Sheet"

```
RAW SEQUENCE LISTING              DATE: 06/19/2000
PATENT APPLICATION:   US/09/590,583    TIME: 10:55:28

Input Set  : A:\419c9.app
Output Set: N:\CRF3\06192000\I590583.raw

5592        115                  120                  125
5594 Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys Gln Leu Asn Val Leu
5595        130                  135                  140
5597 Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala Val Gln Cys Gln Glu
5598 145                  150                  155                  160
5600 Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile
5601                 165                  170                  175
5603 Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Val Tyr Asn Glu
5604            180                  185                  190
5606 Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu
5607        195                  200                  205
5609 Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu Leu Gly Ile His Glu
5610    210                  215                  220
5612 Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu
5613 225                  230                  235                  240
5615 Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys
5616                 245                  250                  255
5618 Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu Glu Gln Asn Val Asp
5619            260                  265                  270
5621 Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu Ser Met Leu Phe Leu
5622    275                  280                  285
5624 Val Ile Ile Met
E--> 5625    290
```

Length of 293 listed, actual count 292

F.Y.I.

Please Note:
**Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220> to
<223> fields of each sequence which presents at least one n or Xaa.**

VERIFICATION SUMMARY   DATE: 06/19/2000
PATENT APPLICATION: US/09/590,583   TIME: 10:55:29

Input Set : A:\419c9.app
Output Set: N:\CRF3\06192000\I590583.raw

L:18 M:270 C: Current Application Number differs, Wrong Format
L:85 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:86 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:87 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:88 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:89 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:90 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:91 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:113 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:115 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:116 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:119 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:120 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:122 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:140 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:142 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:143 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:144 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:145 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:146 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:147 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:148 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:149 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:150 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:151 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:167 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:170 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:172 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:173 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:174 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:175 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:176 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:200 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:203 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:204 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:206 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7

VERIFICATION SUMMARY   DATE: 06/19/2000
PATENT APPLICATION: US/09/590,583   TIME: 10:55:29

Input Set : A:\419c9.app
Output Set: N:\CRF3\06192000\I590583.raw

```
L:207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:208 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:209 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:1116 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:3
L:2380 M:254 E: No. of Bases conflict, LENGTH:Input:120 Counted:60 SEQ:151
M:254 Repeated in SeqNo=151
L:2384 M:252 E: No. of Seq. differs, <211>LENGTH:Input:323 Found:263 SEQ:151
L:4849 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:3
L:5625 M:252 E: No. of Seq. differs, <211>LENGTH:Input:293 Found:292 SEQ:315
```